

What is claimed is:

1. An multi-frequency band antenna comprising:
- 2 a first radiating element being shaped as an extended bent wire for functioning as an
- 3 antenna element of a first frequency band, said first radiating element comprising a
- 4 conductive material;
- 5 a second radiating element for functioning as an antenna element of a second frequency
- 6 band, said second frequency band being different from said first frequency band, said
- 7 second radiating element comprising a conductive material; and
- 8 a feed radiating element having a first end being used as a signal feed point for signals
- 9 of said first and second frequency bands, and a second end being electrically
- 10 connecting said first radiating element to said second radiating element and forming a
- 11 top loaded structure.
2. The multi-frequency band antenna as claimed in claim 1, said feed radiating element
- being a metal conductor.
3. The multi-frequency band antenna as claimed in claim 1, said feed radiating element
- being formed by a metal conductor and a base of a dielectric material.
4. The multi-frequency band antenna as claimed in claim 3, said metal conductor being
- placed on a top surface of said base.
5. The multi-frequency band antenna as claimed in claim 3, said metal conductor being
- placed on an interior layer of said base.
6. The multi-frequency band antenna as claimed in claim 1, said first and second



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16. The multi-frequency band antenna as claimed in claim 1, said first radiating element  
2 having a pattern which is a combination of at least two patterns selected from the  
3 group of extended square-wave pattern, extended saw-tooth pattern and extended  
4 sinusoid pattern.

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17. The multi-frequency band antenna as claimed in claim 1, said second radiating  
2 element being a straight conductor.

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18. The multi-frequency band antenna as claimed in claim 1, said second radiating  
2 element being an extended bent conductor.